

Remarks

The present Response is to the Office Action mailed 10/28/2008, made final. Claims 12-22 and 24-35 are presented for examination.

Claim Rejections - 35 USC § 112

3. Claims 12-22 and 24-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Referring to claim 12, line 7, the claim states that ... APS client modules executing on **"all others of the multiple processor."** This does not agree with the specification. Instead, the instant specification disclose that APS components over multiple processors (see page 7, lines 6-11).

Referring to claim 24, lines 11-12, the claim states that mirroring the state information from **"the APS server module to the plurality of communication processors."** This does not agree with the specification. Instead, the instant Application discloses that mirroring current configuration and state information of **the primary router interface** to the processor supporting the designated **backup router interface** (page 15, line 24-page 16 line 2).

Dependent claims are also rejected for the same reasons since they depend from a rejected base claim.

5. Claims 13, 14 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13, the phrases "the data-packet-network" and "the internet" lack antecedent basis; and the claim is missing a period therefore it is an incomplete claim.

Claim 14 depending from claim 13 and contains the same problems.

Claim 28, the phrase "the internet" lacks antecedent basis.

Applicant's response:

Applicant herein cancels claims 12-35 and presents new claims 36 and 37 for examination. Applicant believes the newly presented claims do not include language objected to by the Examiner, therefore, the 112 rejection is moot.

Claim Rejections - 35 USC § 102

6. Claims 12-22 are rejected under 35 U.S.C. 102(c) as being anticipated by Simons et al. (US 6,332,198 B1).

Regarding claim 12, Simons discloses, in Figs 1, 5, 29, 33A, a distribute processor packet router (10), comprising: a plurality of communicating processor (12, 16a-16n) each supporting a plurality of external communication interfaces (see fig. 1)

an APS server module (14, 20, 28) executing on a first one of the multiple processors (12) managing communication and distributing configuration and state information (column 7, lines 25-41) regarding groupings of communication interfaces (column 40, lines 30-55); and

APS client modules (18a-18n, 22a-22n) running on all others of the multiple processors (16a-16n), the APS client modules monitoring interface state information, reporting to the APS server application, and negotiating with other APS client modules (column 7, lines 25-41; see also figs. 29 and 33; column 44, line 30-61);

characterized in that the APS server module keeps all client modules current with the configuration and state information, such that in a failure of an interface, switching to a backup is accomplished by a client module in a minimum time because all necessary configuration and state information regarding groupings of communication interfaces is locally accessible (fig 33a; column 40, lines 30-55; column 42, lines 39-63; column 43, lines 1-8; Fig. 29 also shows that each primary line card (16a-c) could execute more or less than two backup (for example, backup ATM 468-471) processes).

Regarding claim 13, Simons discloses wherein the data-packet-network is an internet network (column 12, lines 50-67).

Regarding claim 14, Simons discloses the APS software suite wherein the plurality of primary interfaces comprises an APS grouping of interfaces connected to a SONET network (column 45, line 56-column 46, line 29).

Regarding claim 15, Simons discloses the distributed processor router wherein the APS software suite includes a server application, a server-client application, and a client module (column 7, lines 26-41).

Regarding claim 16, Simons discloses the distributed processor router wherein the server application runs on a control card, and the server-client application as well as the client module runs on a line card (column 7, lines 26-57).

Regarding claim 17, Simons discloses the distributed processor router wherein indication of an event is an APS signal received through the target interface on the backup processor (column 35, line 58-column 36, line 27).

Regarding claim 18, Simons discloses the distributed processor router wherein the received APS signal indicates one of the failure or severe degradation of the target interface (column 35, lines 36-47; column 36, lines 28-49).

Regarding claim 19, Simons discloses the distributed processor router wherein the received APS signal indicates an administrative request for interface relocation (column 39, lines 10-60).

Regarding claim 20, Simons discloses the APS software suite wherein the configuration and state information generic to a primary interface for relocation is mirrored to the client supporting the backup interface for the purpose of initializing and

activating the backup interface to function as the primary interface (column 27, lines 51-67).

Regarding claim 21, Simons discloses the APS software suite wherein the distributed processors communicate with each other through a network of fabric cards implemented within the router (column 48, lines 1-11; column 50, lines 62-67).

Regarding claim 22, Simons discloses the APS software suite wherein all communication exchanges between the distributed APS components follow a message sequence scheme wherein each request and response has a sequence number (column 11, lines 31-47).

Applicant's response:

Applicant herein cancels claims 12-35 and presents new independent claims 36 and 37 for examination. Applicant points out that the new claims are very similar to the previously presented claims and should not constitute any new subject matter requiring a new search by the Examiner. The new claims are simply narrowed from the previously presented claims by the limitation of implementing priority back-up procedures at a communication port level of a back-up line card. The majority of the previously claimed limitations are maintained in the newly presented claims.

Claim 36 seeks to protect a distributed processor packet router wherein the control card communicates state and configuration data regarding the plurality of all connected communication ports of all connected cards to a digital memory at the backup line card, the data including priority ranking for individual ones of the communication ports, and in the event of failure of one of the plurality of communication ports, the processor at the primary line card supporting that communication port instructs the processor at the backup line card to operate the backup communication port using the state and configuration data that is stored in the digital memory for the failed communication port, the processor at the backup line card follows the instruction if the backup port is at that time not in use, and if the backup port is in use, follows the instruction only if the priority

of the newly failed communication port is higher ranking than the port for which backup is at that time being performed.

Applicant points out that the art of Simons clearly teaches a method and apparatus for supporting multiple redundancy schemes in a single network device allowing customers having different availability/redundancy needs to be serviced by same network device. Simons allows a user of computer system 10 to setup the hardware/software configurations for connected line cards for that user (col. 16, line 51 to col. 17, line 23). Applicant points out that the user does not have the option, via the network management software (NMS), of setting up a back-up procedure for ports, whereby the ports are prioritized, enabling a backup line card to drop backup services for one port in order to perform backup communication for a port having a higher priority, as claimed.

Applicant argues that the back-up procedures disclosed in Simons do not teach or suggest setting a priority for ports in any redundancy tables of connection data (CDs) stored locally at line cards (local backup 236) or in the network management software (NMS). Applicant points out that Simons teaches a method that would not necessitate a prioritized list of ports used in a backup procedure on a backup line card, as claimed.

Simons teaches a vertical fault isolation wherein for resiliency and fault isolation one or more instances of an application and/or device driver may be started per port on each line card. Therefore, a hardware failure associated with only one port will only affect the processes associated with that port. For example, Fig. 25, of Simons demonstrates that vertical stack 400 includes one instance of ATM 110 and one device driver 43a and is associated with port 44a. Similarly, vertical stacks 402, 404 and 406 include one instance of ATM 111, 112, 113 and one device driver 43b, 43c, 43d, respectively and each vertical stack is associated with a separate port 44b, 44c, 44d, respectively. If ATM 112 fails, then only vertical stack 404 and its associated port 44c are affected. Service is not disrupted on the other ports (ports 44a, 44b, 44d) since vertical stacks 400, 402, and 406 are unaffected and the applications and drivers within those stacks continue to execute and transmit data. Vertical fault isolation allows processes to be deployed in a fashion supportive of the underlying hardware architecture and allows processes associated with particular hardware (e.g., a port) to be isolated from processes associated

with other hardware (e.g., other ports) on the same or a different line card. Therefore, applicant argues that Simons teaches away from a need for prioritizing ports for backup purposes on a single line card or in a distributed processor packet router (col. 32, line 58 to col. 33, line 37).

Applicant points out that although Simons does teach a configurable fault policy beginning at column 38, there is no teaching or suggestion of prioritizing ports in a backup procedure, as claimed. Therefore, applicant believes claim 36 is easily patentable over Simons. Claim 37 is a method claim corresponding to claim 36 and is patentable as argued on behalf of claim 36.

Summary

As all of the claims, as newly presented, have been shown to be patentable over the art presented by the Examiner, applicant respectfully requests reconsideration and the case be passed quickly to issue.

If any fees are due beyond fees paid with this amendment, authorization is made to deduct those fees from deposit account 50-0534. If any time extension is needed beyond any extension requested with this amendment, such extension is hereby requested.

Respectfully Submitted,
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